Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

July 18, 2016

Tom Moe
USS Corporation
P.O. Box 417
8771 Park Ridge Dr
Mountain Iron, MN 55768

RE: Project: NPDES-Line3 Wk 1
Pace Project No.: 1269770

Dear Tom Moe:
Enclosed are the analytical results for sample(s) received by the laboratory on July 06, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Melisa M Woods
melisa.woods@pacelabs.com
Project Manager

Enclosures

cc: Cory Hertling
Terri Sabetti, NTS

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CERTIFICATIONS

Project: NPDES-Line3 Wk 1
Pace Project No.: 1269770

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842015-1
Oklahoma Department of Environmental Quality

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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SAMPLE SUMMARY

Project: NPDES-Line3 Wk 1
Pace Project No.: 1269770

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1269770001	**WS-002 Scrubber Make-Up**	Water	07/06/16 09:30	07/06/16 13:25
1269770002	**WS-003 Thickner Overflow**	Water	07/06/16 09:25	07/06/16 13:25
1269770003	**WS-003 Thickner Overflow**	Water	07/06/16 09:25	07/06/16 13:25

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SAMPLE ANALYTE COUNT

Project: NPDES-Line3 Wk 1
Pace Project No.: 1269770

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1269770001	**WS-002 Scrubber Make-Up**	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	CSD	1	PASI-V
1269770002	**WS-003 Thickner Overflow**	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	CSD	1	PASI-V
1269770003	**WS-003 Thickner Overflow**	EPA 300.0	DMB	2	PASI-V

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: NPDES-Line3 Wk 1
Pace Project No.: 1269770

Sample: WS-002 Scrubber Make-Up **Lab ID: 1269770001** Collected: 07/06/16 09:30 Received: 07/06/16 13:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Calcium, Dissolved	**100**	mg/L	5.0	0.29	10	07/12/16 15:09	07/13/16 09:51	7440-70-2	
Magnesium, Dissolved	**197**	mg/L	5.0	0.67	10	07/12/16 15:09	07/13/16 09:51	7439-95-4	
Total Hardness, Dissolved	**1060**	mg/L	100	50.0	10	07/12/16 15:09	07/13/16 09:51		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**746**	mg/L	20.0	10.0	10		07/13/16 20:15	14808-79-8	

Sample: WS-003 Thickner Overflow **Lab ID: 1269770002** Collected: 07/06/16 09:25 Received: 07/06/16 13:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Calcium, Dissolved	**517**	mg/L	5.0	0.29	10	07/12/16 15:09	07/13/16 09:54	7440-70-2	
Magnesium, Dissolved	**286**	mg/L	5.0	0.67	10	07/12/16 15:09	07/13/16 09:54	7439-95-4	
Total Hardness, Dissolved	**2470**	mg/L	100	50.0	10	07/12/16 15:09	07/13/16 09:54		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**1850**	mg/L	40.0	20.0	20		07/13/16 20:36	14808-79-8	

Sample: WS-003 Thickner Overflow **Lab ID: 1269770003** Collected: 07/06/16 09:25 Received: 07/06/16 13:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**536**	mg/L	5.0	2.5	5		07/13/16 23:21	16887-00-6	
Fluoride	**20.2**	mg/L	0.50	0.25	5		07/13/16 23:21	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES-Line3 Wk 1
Pace Project No.: 1269770

QC Batch: 87452 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 MET Dissolved
Associated Lab Samples: 1269770001, 1269770002

METHOD BLANK: 342439 Matrix: Water
Associated Lab Samples: 1269770001, 1269770002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.029	07/13/16 08:55	
Magnesium, Dissolved	mg/L	ND	0.50	0.067	07/13/16 08:55	

LABORATORY CONTROL SAMPLE: 342440

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	51.9	104	85-115	
Magnesium, Dissolved	mg/L	50	51.9	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 342441 342442

Parameter	Units	1269899001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	285	50	50	331	337	92	104	70-130	2	20	
Magnesium, Dissolved	mg/L	103	50	50	155	156	103	106	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 342443 342444

Parameter	Units	1269808001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	23.9	50	50	77.0	76.1	106	105	70-130	1	20	
Magnesium, Dissolved	mg/L	52.7	50	50	104	103	104	101	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES-Line3 Wk 1
Pace Project No.: 1269770

QC Batch: 87605 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 1269770001, 1269770002

METHOD BLANK: 343192 Matrix: Water
Associated Lab Samples: 1269770001, 1269770002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	07/13/16 13:15	

LABORATORY CONTROL SAMPLE: 343193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	48.6	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 343194 343195

Parameter	Units	1270125001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	67.5	50	50	118	119	101	103	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 343199 343200

Parameter	Units	1270110001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	10.3	200	200	208	207	99	98	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES-Line3 Wk 1
Pace Project No.: 1269770

QC Batch: 87608 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 1269770003

METHOD BLANK: 343206 Matrix: Water
Associated Lab Samples: 1269770003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	07/13/16 14:28	
Fluoride	mg/L	ND	0.10	0.050	07/13/16 14:28	

LABORATORY CONTROL SAMPLE: 343207

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.7	99	90-110	
Fluoride	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 343208 343209

Parameter	Units	1269944001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	49.0	50	50	98.3	98.9	99	100	90-110	1	20	
Fluoride	mg/L	2.7	5	5	7.6	7.7	99	100	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 343210 343211

Parameter	Units	1269685003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10.1	50	50	58.4	58.1	97	96	90-110	1	20	
Fluoride	mg/L	1.5	5	5	6.3	6.3	96	96	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: NPDES-Line3 Wk 1
Pace Project No.: 1269770

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES-Line3 Wk 1
Pace Project No.: 1269770

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1269770001	**WS-002 Scrubber Make-Up**	EPA 200.7	87452	EPA 200.7	87500
1269770002	**WS-003 Thickner Overflow**	EPA 200.7	87452	EPA 200.7	87500
1269770001	**WS-002 Scrubber Make-Up**	EPA 300.0	87605		
1269770002	**WS-003 Thickner Overflow**	EPA 300.0	87605		
1269770003	**WS-003 Thickner Overflow**	EPA 300.0	87608		

WO#: 1269770

PM: MMW Due Date: 07/20/16

CLIENT: USS CORP

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Docu

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be c

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice information:	
Company:	USS Corporation	Report To:	Tom Moe	Attention:	
Address:	P.O. Box 417	Copy To:		Company Name:	
	Mountain Iron, MN 55768			Address:	Regulatory Agency
Email:	tmoe@uss.com	Purchase Order #:		Pace Quote:	
Phone:	(218)749-7485 Fax:	Project Name:	NPDES-LINE 3 Wk1	Pace Project Manager:	heather.zika@pacelabs.com, State / Location
Requested Due Date:		Project #:		Pace Profile #:	

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	LAB FILTERED: SO4	Lab FILTERED: Ca,Mg,Hard	Cl,F	Residual Chlorine (Y/N)	Requested Analysis Filtered (Y/N)	
1	WS-002 Scrubber Make-Up	WT		7-6-16	09:30	7-6-16	09:30												X	X			LAB FILTERED,LAB FILTERED	001
2	WS-003 Thickener Overflow	WT		7-6-16	09:25	7-6-16	09:25												X	X			LAB FILTERED,LAB FILTERED	002
3	WS-003 Thickener Overflow	WT		7-6-16	09:25	7-6-16	09:25														X			
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Paul Mattila	7-6-16	13:25	[illegible]	7/6	1325	24	Y	N	Y

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Paul Mattila					
SIGNATURE of SAMPLER:	Paul Mattila	DATE Signed: 7-6-16				

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: USS Cooperation

Project #: **WO# : 1269770**

1269770

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 2.1 Cooler Temp Corrected °C: 2.4 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: AT 7/06/16

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐ Yes	☐ No	☒ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Lisa Woods **Date:** 7/7/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)